NWS FORM E-5 (11-88) **(PRES. by NWS Instruction 10-924)** **U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE**	HYDROLOGIC SERVICE AREA (HSA) **WFO Jackson, Mississippi**
MONTHLY REPORT OF HYDROLOGIC CONDITIONS	REPORT FOR: MONTH **April** YEAR **2011**
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283	SIGNATURE **Alan E. Gerard, Meteorologist In-Charge** DATE **06/09/2011**

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**

Synopsis...

April was a month of significant weather events. Rainfall was much above normal across much of the Hydrologic Service Area (HSA) north of I-20 and near normal along I-20 and below normal south of I-20. Rainfall across North Arkansas and the Ohio Valley during the month, especially during the last week, would produce near record to record flooding along the Mississippi River during the month of May. April will be remembered for a month of significant tornado activity with rare occurrence of 2 EF-5 tornadoes in the State of Mississippi on the April 27th. April also set the record for the most tornadoes in the month of April since records began in 1950. The total number of tornadoes in April was 63 which shattered the old record of 26 set in April of 2005.

The month began with a weak front slowly pushing south on the 1st and washing out over South Mississippi on the 2nd. Isolated showers of 0.50 inches or less occurred mainly over Central Mississippi. A fast moving cold front on the 4th produced damaging winds and hail across much of the area and spawned tornadoes across the southern half of Mississippi and Northeast Louisiana. Rainfall ranged from 0.50 to 2.00 inches over much of the area. A line of extremely heavy rainfall, from 2.00 to 4.00 inches occurred along a narrow line in a couple of hours from near Kosciusko, MS to Columbus, MS. Major flash flooding was reported in the city of Columbus, MS. High pressure and cooler temperatures moved into the region.

High pressure shifted east late on the 6th allowing warm, moist southerly winds to return to the region. High pressure remained in control of the weather through the 10th. A cold front pushed through the HSA bringing some damaging winds to East Mississippi and ushering in a cooler and drier airmass. Rainfall amounts were 1.00 inch or less, with the heaviest occurring in East Mississippi. High pressure with cooler and drier conditions moved into the area. The high shifted east on the 13th allowing a southerly flow to return with warmer and more moist conditions.

By the morning of the 15th, a squall line was pushing across Southeast Arkansas and the Middle Yazoo Delta Region ahead of a fast moving cold front. The front moved across the HSA producing numerous reports of wind

damage and tornado touchdowns, including an EF-3 tornado that moved across Clinton, MS into northern Jackson, MS. Rainfall from 0.50 to 2.00 inches were reported in lines along supercell thunderstorm tracks. A 3.00 to 6.00 inch line of heavier rainfall occurred Humphries County to North Lowndes County in Mississippi. Rainfall was generally 0.25 inches or less elsewhere. High pressure moved into the HSA with cooler spring-like temperatures. High pressure moved east of the area on the 17th.

From the 20th to 21st, a cold front pushed into the northern HSA and stalled along a line from Greenville, MS to Tupelo, MS. Rainfall from 0.50 to 3.00 inches occurred over much of the HSA. A heavier rainfall from 3.00 to 5.00 inches occurred across Noxubee and Lowndes counties in Mississippi. Southern most sections of the HSA received less than 0.25 inches of rainfall.

By the morning of the 22nd, the front pushed north into the Ohio Valley and merged with a cold front moving from the north. Stubborn high pressure along the East Coast refused to allow any movement to the east and southeast and thus the front stalled and a series of short waves moved across the area through the 25th. On the 25th, a low pressure center formed in eastern Oklahoma and moved north-northeast to Iowa dragging an associated cold front slowly eastward into western Arkansas by the morning of the 26th. A squall line formed late on the 26th ahead of the cold front in Northwest Arkansas. It pushed across Southeast Arkansas, Northeast Louisiana and northern portions of the HSA. Wind damage and tornadoes were reported across this area from the late evening of the 26th into the early morning hours of the 27th. As the squall line push across the remainder of Mississippi and into Alabama, high pressure along the East Coast finally began to slide further to the east. This allowed the cold front in western Arkansas to rapidly begin its push to the east. By the afternoon of the 27th, intense supercell thunderstorms developed ahead of the front which continued into the early evening hours. These cells produced many strong tornadoes over Central, East Central, and Northeast Mississippi as well as Alabama, Tennessee, Georgia, and states up the East Coast into the 28th. There were 32 confirmed tornadoes across the WFO Jackson HSA with another 7 confirmed in the Memphis WFO area. Two of the April 27th tornadoes were classified as EF-5 tornadoes which is the first time in recorded history that there have been two EF-5 Tornadoes in Mississippi on the same day. During the period from the 22nd until the 27th, heavy rainfall from 5.00 to 20.00 inches occurred across North Arkansas, South Missouri and along the Ohio River. In response to this rain and some rainfall across the Ohio River around the middle of the month, the Mississippi River began its historic rise. Rainfall totals across the HSA from the 25th to the 28th ranged from 2.00 to 4.00 inches over Southeast Arkansas, Northeast LA, and North Mississippi while 1.00 to 2.00 inches occurred across Central and Southwest Mississippi and less than 1.00 occurred across South and Southeast Mississippi. High pressure moved into the area after the cold front on the 28th and remained in control of the weather until the end of the month.

River and Soil Conditions...

Rainfall ranged from 110 to 175 percent of normal across northern portions of our HSA. Central portions of the HSA received 50 to 100 percent of

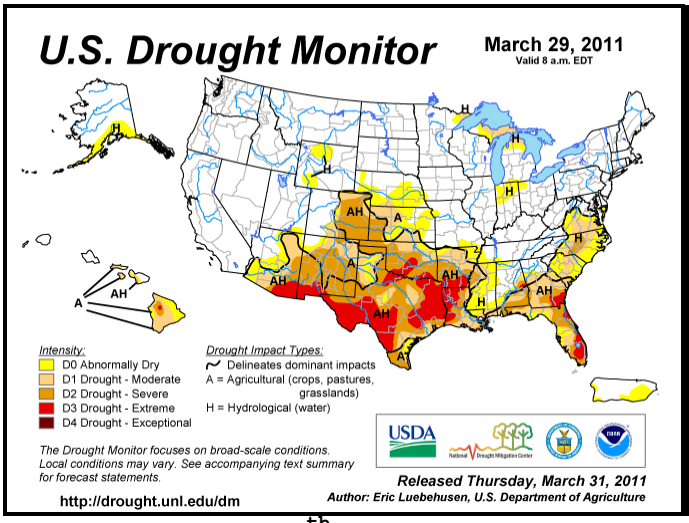
normal rainfall while southern portions of the HSA received 20 to 50 percent of normal.

The driest area in the HSA continued to be across Northeast Louisiana, Southeast Arkansas with the Yazoo Delta Region of Mississippi. Increased rainfall did improve soil moisture across the region. Soil moisture levels decreased across southern portions of the HSA.

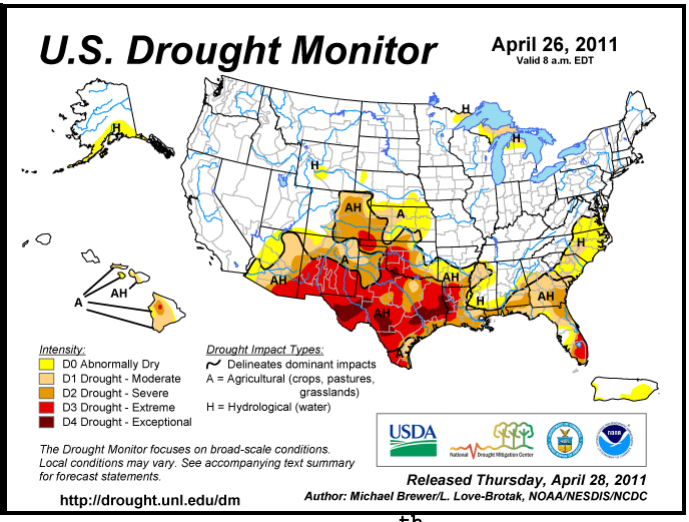
No Soil Graphics for March or April

Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)

A comparison of the March 29th U.S. Drought Monitor to the April 26st U.S. Drought Monitor showed improvement from Extreme Drought (D3) to Severe Drought (D2) conditions across Southeast Arkansas and an improvement from Severe Drought (D2) to Moderate Drought (D1) across Yazoo Delta Region of Mississippi. Southwest Mississippi also showed improvement from Abnormally Dry (D0) to normal conditions.

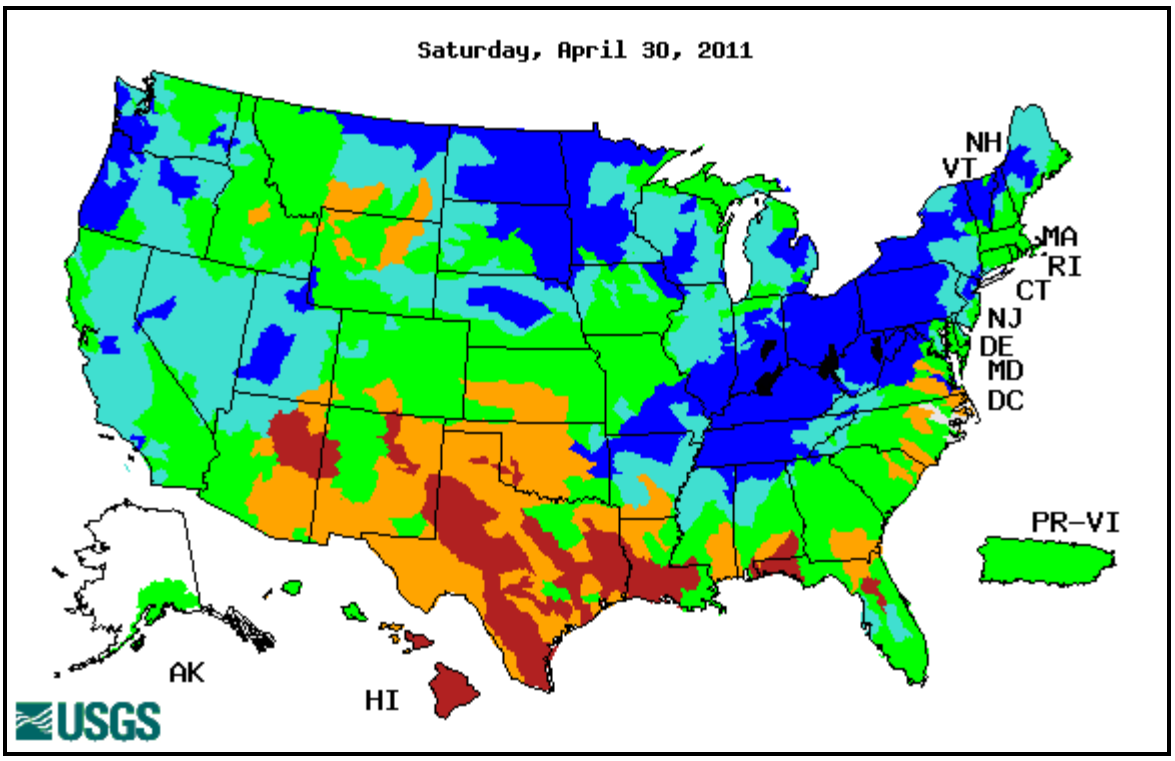


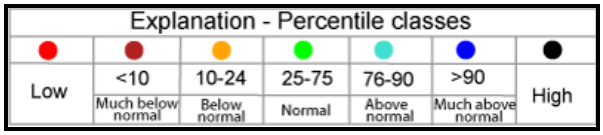
March 29th, 2011



April 26th, 2011

The United States Geological Survey's (USGS) April 2011 river streamflow records were compared with all historical April streamflow records. Stream flows ranged from near normal to above normal streamflow north of I-20. Streamflow was below normal across the Pascagoula River System and near normal across the remaining river south of I-20.





Heavy rainfall from 3.00 to 6.00 across the Highway 82 corridor in North Central Mississippi caused the Upper and Middle Big Black River to exceed moderate flood stage. Minor flooding occurred along the Lower Big Black River. Minor flooding also occurred along the Upper Pearl, Yalobusha, Noxubee, Luxapallila River Basins and Tibee Creek.

Minor rises occurred along the Upper Pearl, Yazoo River and tributaries, and the streams of Northeast Louisiana and Southeast Arkansas. Little change was observed along other streams in the HSA.

The Mississippi River crested around the end of March and early April and receded through the middle of the month before beginning to rise once again and exceeding flood stage from Arkansas City to Natchez by the end of April. Snow melt from late March in the upper-most regions of the Upper Mississippi River Basin and heavy rainfall over North Arkansas, South Missouri, and the Ohio Valley prompted the rise along the Lower Mississippi River.

Flood potentials are as follows:

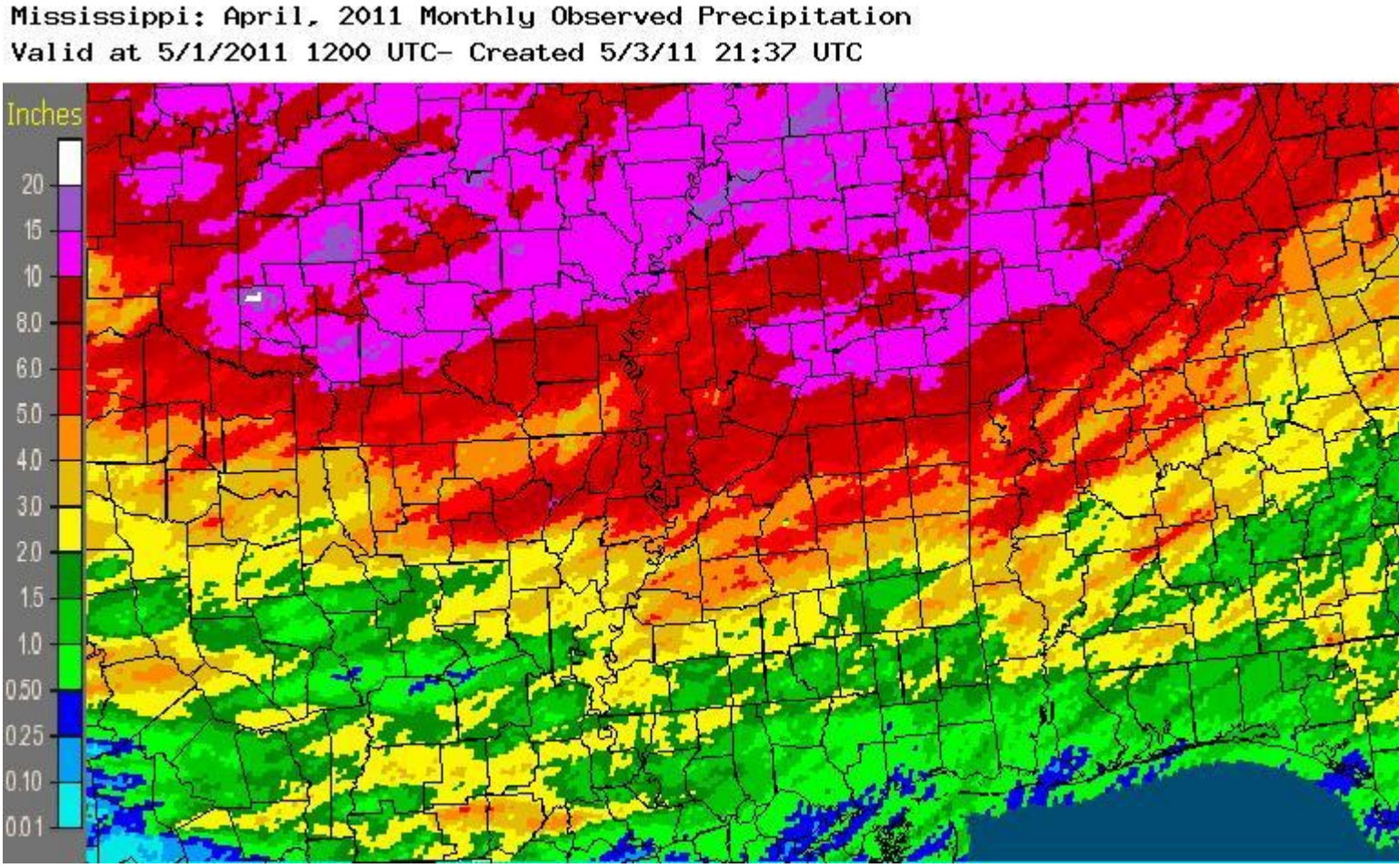
***Pearl River System*:**	**Near Normal.**
***Yazoo River System*:**	**Near Normal.**
***Big Black River System*:**	**Above Normal.**
***Homochitto River System*:**	**Below Normal.**
***Pascagoula River System*:**	**Below Normal.**

***Northeast LA and Southeast AR*: Near Normal.**
***Tombigbee River System*: Above Normal.**
***Mississippi River:* Above Normal.**

Rainfall for the month of April

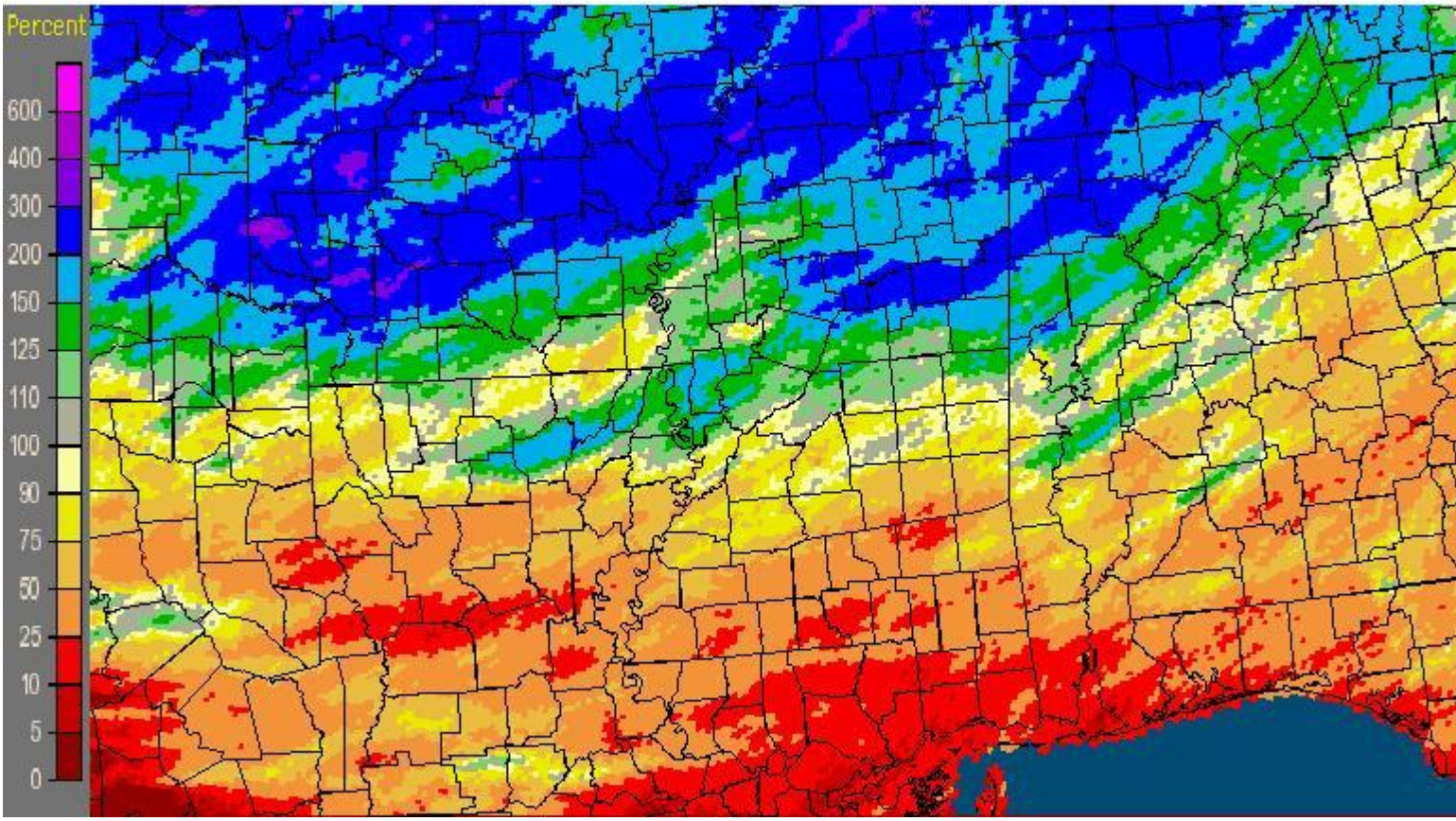
The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on March 31st until 7 am on April 30th were: 13.50 inches at Columbus, MS; 12.05 inches at Starkville, MS; 11.69 inches at Eupora, MS; 11.68 inches at Ackerman, MS; 10.99 inches at Vaiden, MS; 10.90 inches at Oakridge, LA; 10.80 inches at Bluff Lake, MS; and 10.10 inches at Crawford, MS.

The lowest monthly rainfall totals in the HSA were: 1.07 inches at Columbia, MS; 1.49 inches at Laurel, MS; 1.50 inches at Jonesville Lock and Dam, LA; and 1.61 inches at Larto Lake, LA.



April 2011 Rainfall Estimates

Mississippi: April, 2011 Monthly Percent of Normal Precipitation
Valid at 5/1/2011 1200 UTC- Created 5/3/11 21:41 UTC



2011 April Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

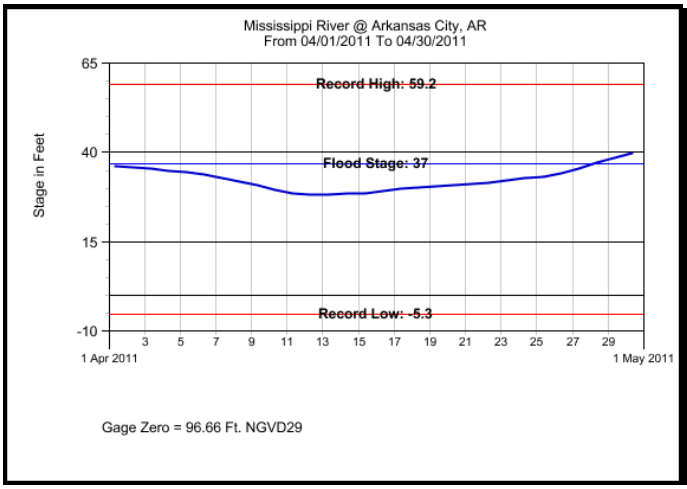
April rainfall for Selected Cities...

City (Airport)	April Rainfall	Departure from normal	2011 Rainfall	2011 Departure from Normal
Jackson, MS	4.08	-1.90	19.18	-2.71
Meridian, MS	4.18	-1.44	20.77	-3.05
Greenwood, MS	5.79	+0.13	13.25	-7.65
Greenville, MS	5.94	+0.54	11.85	-9.38
Hattiesburg, MS	1.55	-4.02	20.64	-3.35
Vicksburg, MS	4.43	-1.09	17.69	-5.21

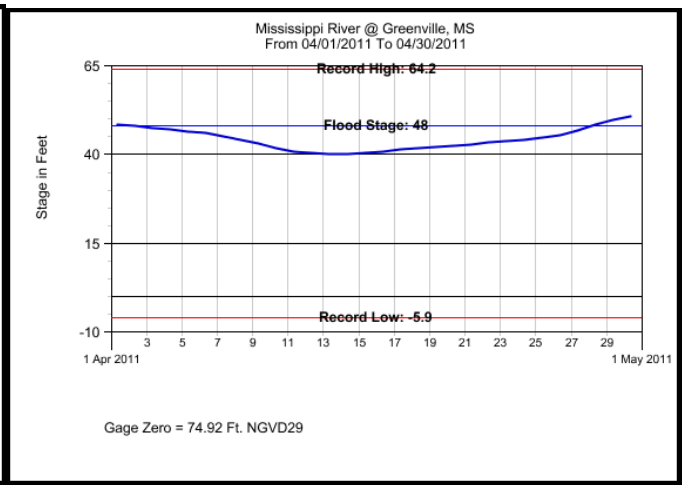
Mississippi River...

Mississippi River Plots for April, 2011

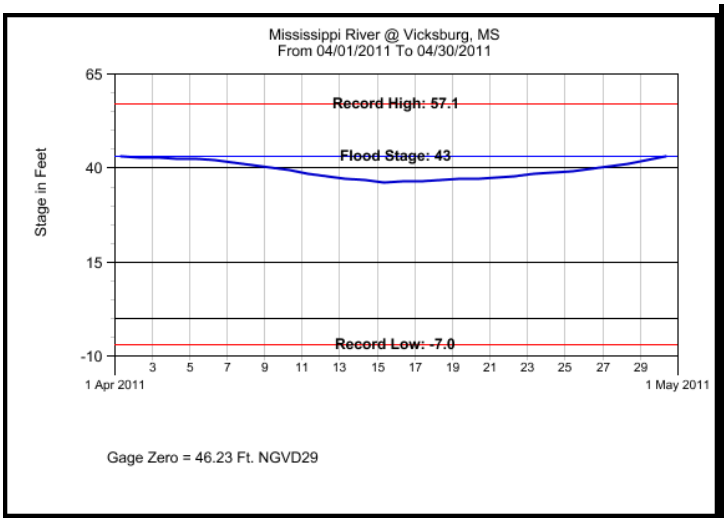
Plots Courtesy of the United States Army Corps of Engineers



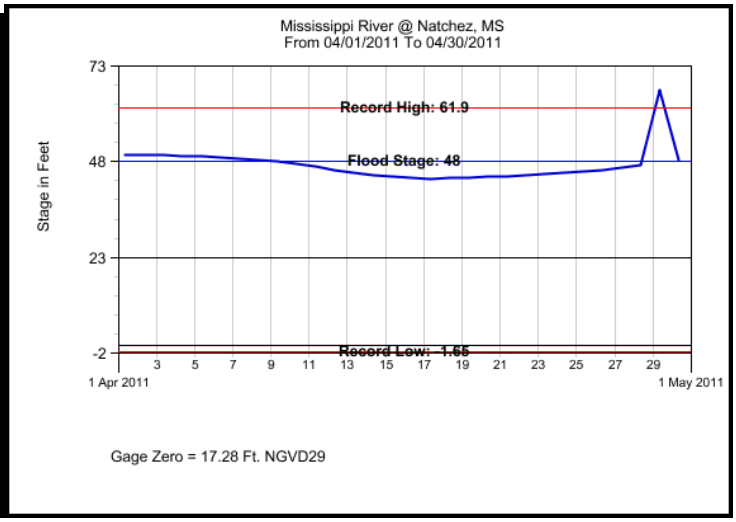
ARKANSAS CITY, MS



GREENVILLE, MS



VICKSBURG, MS



NATCHEZ, MS

(note: bad stage on the 29th)

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	40.39	04/30/11	28.25	04/12/11
Greenville, MS	48	51.58	04/30/11	40.08	04/14/11
Vicksburg, MS	43	43.90	04/30/11	36.23	04/15/11
Natchez, MS	48	49.86	04/01/11	43.57	04/17/11

Total Flood Warning products issued: 39
Total Flood Statement products issued: 162
Total Flood Advisories MS River : 12
Daily Rainfall Products (RRA'S) issued: 30
Daily River Forecast Products (RVS'S) issued: 30
Daily River Stage products (RVA'S) issued: 30

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&

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Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District